

What is Claimed is:

1. A method of manufacturing a master disc for a magnetic disc, comprising the steps of:  
providing a substrate;  
forming an SiO<sub>2</sub> film on the surface of the substrate;  
etching the SiO<sub>2</sub> film to form a magnetic pattern on the surface of the substrate;  
etching the substrate using the SiO<sub>2</sub> film as a mask to form grooves corresponding to the magnetic pattern;  
forming a magnetic film on the surface of the substrate to fill the grooves and cover the SiO<sub>2</sub> film; and  
polishing the soft magnetic film to expose the surface of the SiO<sub>2</sub> film,  
wherein the SiO<sub>2</sub> film acts as a polishing stopper.
2. A method according to claim 1, wherein the substrate is a silicon substrate.
3. A method according to claim 2, further including the steps of forming a photoresist film on the SiO<sub>2</sub> film, patterning the photoresist film, and developing the photoresist film to form a photoresist mask for etching the SiO<sub>2</sub> film.
4. A method according to claim 3, wherein the SiO<sub>2</sub> film is etched under a mixed gas atmosphere containing CHF<sub>3</sub> and oxygen using the photoresist as a mask.
5. A method according to claim 4, wherein the substrate is etched under an SF<sub>6</sub> gas atmosphere to form the grooves having a depth of about 0.5μm.
6. A method according to claim 5, wherein the magnetic film of about 1μm is deposited on the substrate by sputtering to fill the grooves and cover the SiO<sub>2</sub> film.
7. A method according to claim 6, wherein the SiO<sub>2</sub> film having a thickness ranging 0.1 to 0.2μm is formed on the surface of the substrate by thermal oxidation.

8. A method according to claim 1, wherein each of the grooves has a width not greater than about 0.5 $\mu$ m.
9. A master disc formed according to the method of claim 1.
10. A master disc for a magnetic disc, comprising:
  - a substrate having grooves corresponding to a magnetic pattern;
  - an SiO<sub>2</sub> film on the surface of the substrate, the SiO<sub>2</sub> film having channels corresponding to the magnetic pattern and aligned with the grooves of the substrate; and
  - a magnetic material filling the grooves and the channels.
11. A master disc according to claim 10, wherein the substrate is a silicon substrate.
12. A master disc according to claim 10, wherein each of the grooves is about 0.5 $\mu$ m deep.
13. A master disc according to claim 10, wherein the SiO<sub>2</sub> film has a thickness ranging 0.1 to 0.2 $\mu$ m.
14. A master disc according to claim 10, wherein each of the grooves has a width not greater than about 0.5 $\mu$ m.